LIFTING THE FOG:

PROVIDER SCREENING BEHAVIORS AND NEW MOTHERS' KNOWLEDGE OF PERINATAL MOOD DISORDERS

by

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Abstract

This study examines the communication and screening practices of healthcare professionals in regards to perinatal mood disorders (PMDs). Specifically, this study sought to understand the frequency of PMD screenings, which providers complete screenings, provider communication about PMDs, and women's knowledge of PMD symptoms. Participants were 155 mothers who completed a 16-item online questionnaire. Descriptive and inferential statistical analysis found PMD screening is low. Participants who were screened for PMDs were most often screened by prescribing providers. Results also indicate that while there is little communication about PMDs, oral communication is more common than written communication. Participants were also largely unable to identify symptoms of a common PMD; yet, knowledge of symptoms was not associated with age or education level. A discussion of these findings is provided, including study limitations and recommendations for future research.

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Dedication

I dedicate this thesis to all of the mothers and fathers who have been stricken with PMDs, as well as to their family members, friends, and colleagues who have supported their journeys. I also dedicate this work to my late mother, Salli Haack, who experienced postpartum anxiety and postpartum OCD after I was born. My mother passed away suddenly in 2010 prior to my first pregnancy, so we did not have the opportunity to discuss her specific struggles. When I personally suffered from postpartum anxiety and postpartum OCD in 2011 and 2012, I was heartbroken that I could not share my concerns with my mother, or learn about her personal perspective.

Given that my mother and I both experienced PMDs, I had strong aspirations to learn more about the prevalence, stigma, possible causes, and risk factors for PMDs. Immediately after my entry into graduate school, I knew I wanted to write a meaningful thesis that would someday aid in the increase of PMD awareness; a work that would contribute to helping women obtain the support, screening, and treatment they need in order to overcome their battles with PMDs.

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Introduction

The birth of a child is usually thought of as a special time for families. Unfortunately, women may experience negative alterations in mood that can affect many aspects of their lives while adjusting to new motherhood. Throughout the years, women have been plagued by perinatal mood disorders (PMDs) and have been apprehensive to discuss symptoms for fear of being judged by their female peers and society, having their infants taken from them, and for various other reasons associated with fear and stigma. As a result, many women suffer in silence and are ashamed to admit they do not meet the societal expectations of new mothers. If PMDs are left untreated, conditions worsen and can lead to a host of problems, including child behavioral issues, poor relations between mother and child, and even mothers taking their own lives, or the lives of their infants (known and matricide and infanticide, respectively). PMDs do not exclusively affect mothers, but can also affect their spouses, growing infants, other family members, and friends.

This thesis works to supplement existing research with the intention of creating more awareness of the importance and urgency of PMD screening, communication, and knowledge.

Literature Review

Perinatal mood disorders (PMDs) can lead to severe problems for new mothers, and their newborns (NIMH, n.d.). Chemical alterations in the brain, as well as consistent insomnia, feelings of isolation, and lack of support can all lead to development of PMDs, such as postpartum depression (PPD), perinatal anxiety, postpartum obsessive-compulsive disorder (POCD) and postpartum psychosis (PPP) (NIMH, n.d.). This literature review will explore these conditions as well as screening and treatment options, societal stigmas affecting new motherhood and PMDs.

Explaining Perinatal Mood Disorders

Good Housekeeping magazine showcased the term postpartum depression in the year 1960. There was not, however, a definitive distinction between PPD and the baby blues, a common short-lived response to new motherhood resulting from hormonal fluctuations (Held & Rutherford, 2012). In fact, PPD was not recognized as a mood disorder separate of major depressive disorder (MDD) until the release of the DSM-V in May of 2013 (Segre & Davis, 2013). Today, 10-20% of new mothers suffer from perinatal anxiety or depression, two common PMDs. This is a conservative figure as many women do not report their symptoms and are not screened or diagnosed for PMDs.

New mothers should seek immediate care if experiencing symptoms of a PMD (APA, 2014). Yet, that is often difficult as many women are not screened for PMDs, and others with symptoms may suffer in silence due to fears associated with perceptions of her ability as a mother (Howorth, 2017). Left untreated, mothers suffering with PMDs may have trouble connecting with their children, which can negatively impact their children's overall development and health (AWHONN, 2015). Additionally, it is also important to identify the potential

consequences during the prenatal period. While a woman is pregnant and is experiencing negative alterations in mood, she may not adhere to proposed medical care and may be more apt to consume less nutritious foods (Kendig et al., 2017). Additionally, she may undergo weight changes, begin to smoke, or partake in substance abuse if she is struggling with symptoms of PMDs during her pregnancy (Kendig et al., 2017). If a mother with PMDs is not properly diagnosed, does not report symptoms, or is resistant to appropriate treatment protocols, it may result in inhibited interactions between the mother and her infant (Yawn, Kurland, & Bertram, 2013). Subsequently, the child may have trouble interacting with and amongst peers, experience behavioral issues, and suffer with cognitive abilities (Yawn et al., 2013).

Another significant consequence of PMDs in the United States is suicide, which "accounts for about 20 percent of postpartum deaths and is the second most common cause of mortality in postpartum women" (Bamforth, 2016, para. 6). In the UK, suicide is among the leading causes of death in new mothers (Oates, 2003). Suicides among mothers (matricide) during the first twelve months are not recognized as "pregnancy-related deaths" (Stone, n.d.). Rather, these matricides are viewed as "pregnancy-associated deaths," which are not necessarily deemed as biological in nature (Stone, n.d.). The definition of "pregnancy-related death," is the death of a women during pregnancy, or within one year of the end of pregnancy, due to a pregnancy complication, a chain of events caused by pregnancy or birth, or the worsening of an unrelated condition in the mother, due to pregnancy or birth (Stone, n.d.).

Unfortunately, matricide and infanticide are potential outcomes of untreated PMDs, and are not uncommon. Brockington (2004, p. 307) states that, "obsessions of infanticide were one of the first postpartum disorders to be described." Further, it is worth noting that untreated PMDs

can lead to infanticide, highlighting the importance of being proactive about diagnoses and treatments, rather than reactive about PMDs, such as postpartum depression (Anderson, 2013).

Perinatal Mood Disorders

This PMD review will include an overview of postpartum depression (PPD), perinatal anxiety, and postpartum OCD (POCD). Even though some PMD symptoms are common across all three conditions, there are some symptoms that distinctly separate the conditions from one another.

Postpartum Depression (PPD)

It is believed that as many as 1 in 7 women develop PPD, but that the condition is thought to be underreported, due to a number of factors, including stigma and lack of knowledge about the condition (Anderson, 2013). Symptoms of progressive PPD can include anxious tendencies, sadness, tiredness, appetite disruption, and "self-deprecatory thoughts" (Millis & Kornblith, 1992, p. 193). These symptoms can intensify over time and can result in a woman having suicidal thoughts, or thoughts of harming her newborn baby (Millis & Kornblith, 1992). Despite severe risks associated with PPD, many women are reluctant to seek help or acknowledge the condition's effects (Anderson, 2013). PPD is not always a short-term condition and can last for years without appropriate treatment. If left untreated, women are subject to many risks, including matricide (NIMH, 2014). PPD does not discriminate and exists across the socioeconomic spectrum, as well as across all age ranges and races (Camp, 2013). In addition, a mother's entire family can experience repercussions from her physical and mental state if the mother struggles with PPD (Camp, 2013).

PPD often materializes as depressive symptoms that occur for more than two weeks in duration, immediately following childbirth (Camp, 2013). Even though PPD is different than the

baby blues, women may have a difficult time deciphering between the conditions, due to similar symptomatology. The baby blues are viewed as being very common, usually spanning the course of up to two weeks, and resolves as hormones return to pre-pregnancy levels. PPD, however, can manifest itself around one week and even one month after a woman has delivered her baby (NIMH, 2014). While PPD occurs in 10-20% of new mothers, 80 percent of new mothers experience baby blues, which makes this occurrence more common, and more expected for new mothers (AWHONN, 2015). PPD differs from the baby blues in parameters such as duration of condition, severity of symptoms, and percentage of the population (NIMH, 2014). As a more extreme and dangerous form of depression, PPD can also lead to PPP if left untreated (NIMH, 2014). PPP is a much more serious condition that includes symptoms like hallucinations and delusions and an altered sense of reality (Edwards & Timmons, 2005). Despite the prevalence of PPD and its resulting symptoms, more research is needed to fully understand how this disorder affects mothers and their loved ones.

Perinatal Anxiety

Perinatal anxiety conditions are underestimated and are likely more prevalent than even PPD (Brockington, 2004). The prevalence of anxiety in perinatal women is significant, with 13 to 21% estimated to have prenatal anxiety and 11 to 17% to have postpartum anxiety (Kendig et al., 2017). Mothers with perinatal anxiety can experience symptoms such as excessive worry, difficulty being still, ruminating thoughts, and appetite disruptions (PSI, n.d.). Furthermore, physical symptoms may also develop, such as stomach upset, dizziness, and even hot flashes (PSI, n.d.).

Based on research outlined in Brockington (2004), various fears may arise as symptoms of perinatal anxiety, such as the fear of losing an infant due to sudden death (Brockington, 2004).

Enhancing anxiety is that a mother may have difficulty sleeping, due to the heightened sensitivity to her infant's breathing. Thus, mothers may find themselves sleep deprived if they are consistently checking in on their sleeping infants (Brockington, 2004). This combination of prolonged sleep deprivation and persistent anxious thoughts can eventually manifest into depressive symptoms (Dennis, Falah-Hassani, Brown, & Vigod, 2016). Based on the aforementioned information, there is a need to identify various psychological, biological, and psychosocial risk factors that play a role in the development of perinatal anxiety, in order to possibly mitigate symptoms (Dennis et al., 2016).

Postpartum Obsessive Compulsive Disorder (OCD)

Women experience various hormonal changes throughout the course of their pregnancies (Altemus, 2001; Chaudron, 2010; Stein et al., 1993). Chaudron (2010) notes that when two hormones, estrogen and progesterone, suddenly shift, a disruption in the transmission of serotonin may occur. This disruption may be a factor contributing to obsessive compulsive symptoms (OCS) and obsessive compulsive disorder (OCD) (Chaudron, 2010; Williams & Koran, 1997). This rapid change can cause postpartum OCD to present itself as soon as one week after a woman gives birth (Abramowitz, 2007). Some research indicates that a larger than normal percentage of perinatal women with previously diagnosed OCD have reported that their OCD worsened during their pregnancies and during the postpartum period (Abramowitz, 2007).

Postpartum OCD can be extremely scary, with women experiencing images of their babies being dead and thoughts of drowning, stabbing, or dropping their babies (Abramowitz, 2007). Other actions that are indicative of mothers with postpartum OCD include consistently checking on children, praying obsessively, and seeking reassurance by constant research about symptoms (Abramowitz, 2007). Even though Postpartum OCD consists of mothers having

thoughts of attacking their children, these thoughts do not typically include anger and these thoughts are not indicative of child abuse (Brockington, 2004). These feelings can result in distress, which can lead to a reduction in mother-baby interactions (Brockington, 2004). A mother who suffers from OCD often exhibits gentleness toward her infant, combined with infanticidal impulses, and has visions of her family's shock and sadness if any harm is inflicted on the infant (Brockington, 2004).

Societal Stigmas about Motherhood

Research shows that women may often be disinclined to discuss their symptoms with family, friends, or healthcare providers, in fear of having their babies taken away from them or being judged (Anderson, 2013). Postpartum women may experience guilt if they do not feel instant joy upon delivery of their newborns, due to the idea of childbirth being characterized as a happy time for new mothers (Anderson, 2013). Even before postpartum women give birth, there are a numerous pressures placed upon them to perform motherhood; these pressures can be overwhelming, to the detriment a woman's health and the health of their unborn child (O'Connor, 2017). Depictions of new mother euphoria are widely distributed by popular media, which can lead to mothers feeling apprehensive about sharing thoughts of despair with others (Gruen, 1990). These media messages set up an ideology of the good mother and the bad mother, and mothers with PMDs do not fit the good mother mold (Douglas & Michaels, 2005).

Women who experience symptoms of PMDs may think that society views them as mentally incompetent, so they are hesitant to let others know of their struggles (Kingston et al., 2014). Should a new mother express feelings of distress, she may be advised by healthcare providers and/or family members to engage in an evening out with her spouse/significant other, buy something new, or try to get some exercise (Gruen, 1990); however, PMD symptoms are not

addressed by material objects and a night out. In addition to being plagued by thoughts of societal judgment, mothers may be apprehensive to disclose information because they feel their needs might be overlooked or misconstrued by family, friends, or healthcare professionals.

Mauthner (1999) studied women with PPD and found they placed a great deal of pressure upon themselves in their roles as mothers. The reality of actual motherhood conflicted greatly with these women's initial expectations. Mauthner identified that mothers had their own ideas regarding what constitutes a good mother, specifically noting that some of those ideas included, "a natural, drug-free delivery," the ability to breastfeed their infants, being able to stay-at-home, and being a super mother (i.e. the mother who does it all) (Mauthner, 1999, p.152). Kingston et al. (2014) explain that new mothers who interact with other mothers who seem confident about motherhood may feel forced to show elation and confidence, even though that is not how they truly feel.

The pressure to be a good mother can also lead to mothers being fearful of discussing PMD symptoms, due to the possibility of individuals judging them as failures (Kingston et al., 2014). Douglas and Michaels (2005) elaborate on the societal demands of mothers doing everything the correct way, enjoying every waking moment of it, and if women don't love all aspects of motherhood, they are not good moms. If women don't succeed in meeting their lofty self-expectations, they may feel guilty, place blame on themselves, and classify themselves as bad mothers (Douglas & Michaels, 2005). Douglas and Michaels note some statistics about the difficulties of being a mother, where 81% of women stated in a poll that mothering is harder now than twenty or thirty years ago. In that same poll, the number of women who thought mothers aren't doing a good enough job versus 20 to 30 years ago was 56%. These repetitive, self-deprecatory thoughts about can multiply in intensity and eventually lead to the onset of PMDs.

In order to show improvements in outcomes, screening for PMDs should be combined with components of care, such as psychiatric referrals.

Postpartum women are not able to appropriately express their feelings of sadness due to a lack of compassionate relationships and the public's misrepresentations of PPD (Mauthner, 1999). The general public seems to place judgment on and offer unwarranted advice to mothers in common places, such as grocery stores, coffee shops, and shopping malls (Howorth, 2017). Women are repeatedly fed information and unsolicited advice from society in general about pregnancy and motherhood in abundance (Douglas & Michaels, 2005). This information overload can cause women to question their own mothering practices, judge other women's practices, and compete with other mothers (Douglas & Michaels, 2005). Postpartum women may doubt themselves even more when friends and family members become judgmental and are not supportive of expressed feelings (Mauthner, 1999). Based on the these fears of societal and familial judgment, new mothers may be unwilling to search for healthcare, which in turn, leaves them without the help they need to address their PMD symptoms.

Research by Edwards and Timmons (2005) examined mothers' experiences with stigma, as well as how they viewed themselves in their roles as mothers. The authors noted that one of the participants, who had been a patient in a mother-baby unit, stated that she was "really paranoid about what people would think," and also said, "I didn't want my husband to tell anybody where I was" (Edwards & Timmons, 2005, p. 475). The participant elaborated by stating, "I didn't want people to know I had a mental illness, I would have preferred them to think I was in the hospital for a physical illness, definitely" (Edwards & Timmons, 2005, p. 475).

PMD Screening Tools

Given societal understandings of motherhood and the resulting guilt of not being a "good" mother, many women suffer with PMDs in silence, choosing to tell no one of their symptoms (Pinto-Foltz & Logsdon, 2008). Thus, it is important that screening for PMDs take place in order to identify new mothers who may be struggling in their new role (Tam, Newton, & Parry, 2002). The Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) (2015, p. 687) states that, "all pregnant and postpartum women should be screened for mood and anxiety disorders." A key element for reducing mortality in postpartum women is to perform earlier screening (in the prenatal phase) to identify women who may be at a higher risk for developing mood disorders (Johns Hopkins Medicine, 2013). Despite the need for screening, and the existence of PMD screening tools, only 18% of physicians participate in active screening utilizing designated PPD screening tools (Yawn et al., 2013).

There are a number of diagnostic screening tools available to healthcare providers. However, PPDs are often hard to diagnose, due in part to a historical lack of psychiatric diagnostic parameters. The American Psychological Association's *Diagnostic and Statistical Manual of Mental Health Disorders* did not, until recently, include PPD as a classification apart from major depressive disorder. In fact, The DSM-IV, published in 1994, was the first version that stated depression can occur with postpartum onset (Segre & Davis, 2013). Unfortunately, this indicator was applicable to other disorders, such as Major Depressive Disorder, Bipolar I disorder, and Bipolar II disorder (Segre & Davis, 2013; APA, n.d.). The DSM-V, after being pressured by members of Postpartum Support International, does include more specific indicators of *peripartum onse*t. While this revision is an advancement in the definition of PMDs, the revision did not change the time-frame for which a PMD must be diagnosed. The revision

still indicates that a PMD is diagnosable within four weeks postpartum, despite several studies that indicate conditions like PPD manifesting up to one year after childbirth (APA, n.d.).

Despite the difficulty in diagnosing PMDs, there are several measures available for physicians to screen for these conditions. Beck established the Postpartum Depression Screening Scale (PDSS), as well as the Postpartum Depression Predictors Inventory-Revised (PDPI-R) scale (Beck, Records, & Rice, 2006). Both contain questions geared more specifically toward postpartum depression, versus general depression, as is the case with the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI is a screening tool commonly used to diagnose PPD prior to the development of PPD-specific measurements like the PDSS and PDPI-R. While the BDI considered factors such as insomnia and fatigue, the BDI was deemed as being potentially unsatisfactory for the discovery of PPD (Beck & Gable, 2000).

The psychometric properties of the PDSS made improvements in the detection process of PPD (Beck & Gable, 2000) and was based on comments from female research participants in Beck's PPD research study (Beck & Gable, 2000). Building upon the PDSS, the PDPI-R measures "13 risk factors reported to significantly related to the development of PPD" (Beck et al., 2006). Questions are asked by healthcare professionals in an interview format in order to foster a discussion about symptoms and to enable women to voice concerns about these risk factors (Beck et al., 2006).

Another tool, the Edinburgh Postnatal Depression Screening Scale (EPDS) is a screening tool used for measuring a broad spectrum of perinatal mood disorders (Brockington, 2004). The (EPDS) offers specific screening properties for PPD and can also be effective at screening for anxiety (Beck & Gable, 2000). Additionally, the National Institute for Health and Clinical Excellence (NICE, 2014) recommends the GAD-7 (Generalized Anxiety Disorder-7) for

perinatal anxiety screening (Ashford, Ayers, & Olander, 2017). The GAD-7 is appropriate for screening for generalized anxiety disorder during the antenatal and postnatal periods (Ashford et al., 2017).

There are also screening tools for OCS and OCD, including the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), which is classified as the best instrument for the assessment of OCS and OCD (Chaudron & Nirodi, 2010). The severity of symptoms is measured in five different groups, ranging from sub-clinical to extreme, and the screening can be done over the phone. While the Y-BOCS has not been validated for perinatal or postpartum screening, the scale has been utilized in research with perinatal women (Chaudron & Nirodi, 2010).

The Mood Disorder Questionnaire (MDQ) is a screening tool that is not as widely used to screen for PMDs as some aforementioned measurements. The MDQ has been utilized for bipolar disorder screening (Merrill et al., 2015). The MDQ is a brief screening that is used mostly in the primary care sector (Hirschfeld et al., 2003). A study by Sharma and Xie (2011), however, indicates its usefulness for screening during the postpartum period (Merrill et al., 2015).

Recommendations for screening women routinely are supported by groups, such as the American Academy of Pediatrics (AAP) and the Australian Midwifery Association. On the contrary, there some organizations, such as the American College of Obstetrics and Gynecology (ACOG), The U. S. Agency for Healthcare Research and Quality (AHRQ), and U. S. Preventive Services Task Force (USPSTF) think that there is a lack of evidence to suggest universal PMD screening practices (Yawn, LaRusso, Bertram, & Bobo, 2015).

PMD Treatment Options

PMDs are generally treated based on the needs of individual patients (Gray, 2018). Traditional treatment options for PMDs include drug therapy, cognitive behavioral therapy

(CBT) with a clinical psychologist, psychotherapy, and monitored inpatient treatment at mother-baby facilities (Brockington, 2004). Some new mothers are apprehensive about taking oral medications, like antidepressants, anxiolytics, sleep-aids, and antipsychotics, if they are breastfeeding (Gray, 2018). Therefore, psychotherapy and CBT are both successful methods of treatment and have been widely reported in psychological research (Gray, 2018).

It is important to note that what works for one mother may not work for another. Some mothers require one type of treatment approach, whereas another mother may require a multi-faceted treatment plan (Brockington, 2004). In recent years, additional nonpharmacological therapies have been utilized for treatment of PMDs, such as Internet-based education and behavioral activation. Technological advances create more opportunities for mothers to receive care in non-traditional ways, without being forced to see healthcare providers in office settings. This is important because technology can provide quicker treatment options. Beck and Gable (2000) explained that the duration of PMDs can be prolonged if there is a delay in the administration of appropriate treatments.

Self-help via Internet-based education that can be sought by the patient, or in combination with a healthcare provider (Ashford, 2017). These treatment methods give mothers the latitude to engage in treatment while still meeting the needs of their babies' feeding and sleeping schedules (Ashford, 2017; McDaniel, Coyne, & Holmes, 2012). In addition, this method of therapy allows mothers more privacy and may reduce fears associated with social stigma and expectation of new mothers (Ashford, 2017; Woolhouse, Brown, Krastev, Perlen, & Gunn, 2009). Financially, web-based therapies may cost less than visiting a provider in a one-on-one setting (Ashford, 2017). In a 2017 study, Ashford found women noted high interest in Internet-based therapies.

Another nonmedicinal intervention explained by Dimidjian et al. (2017) is Behavioral Activation (BA). Dimidjian et al.'s study is the first of its kind to test BA efficacy compared to treatment as usual among women during pregnancy. BA emphasizes how depression relates to "shifts in life context and on the maladaptive links that can develop between mood and reduced activity, and increased withdrawal, avoidance, and routine disruption" (Dimidjian et al., 2017, p. 27). Intervention methods help break cycles of depression by guiding individuals to increase their activities, to problem solve, and to surround themselves with other people or practices that can foster rewards (Dimidjian et al., 2017). Dimidjian et al. (2017) demonstrate that BA treated women experience significantly lower amounts of depressive symptoms, as well as significant benefits regarding anxious symptoms (p. 33).

There are many different PMD treatment options for healthcare professionals to take into consideration, such as CBT, prescription medications, Internet education, and Behavioral Activation. Even though healthcare providers may suggest treatments they believe are best for their patients, women may have opposing views, especially when it comes to taking prescribed medications. It is important for patients and healthcare professionals to decide on the best therapeutic option(s) in a collaborative manner.

Importance of this Study

There are myriad resources available for screening for PMDs, and a number of treatment options available to address symptoms of various PMDs. Yet, scores of women suffer with PMDs silently, choosing not to disclose their symptoms for fear of being judged by peers, family members, or healthcare providers. Others suffer because they are not screened for PMDs by qualified practitioners. As such, it is important to understand the communication, both written and oral, that exists between women and their healthcare providers about PMD symptoms,

screening, and treatment options. It is also important to understand who is providing that communication and when that communication is taking place, as it is important to educate women about these potential issues prior to delivery in an effort to ensure women are aware of PMDs and feel confident in their ability to disclose symptoms and engage in treatment. It is equally important to understand whether women are being screened for PMDs as early screening can lead to more timely and more effective treatment.

Research Questions and Hypotheses

This study had a number of objectives. First, this study sought to determine whether or not women were being screening for PMDs and, if so, by whom. Second, this study investigated women's knowledge of common PMD symptoms. Third, this study explored provider communication about PMDs. Lastly, this study explored the relationships between age and education level and knowledge of a common PMD. Given these goals, the following research questions are posed:

RQ1: When do women report being screened for perinatal mood disorders?

RQ2: Which healthcare professionals are performing screenings for perinatal mood disorders?

RQ3: What is the nature of physician communication about PMDs to women?

In addition, two hypotheses are presented. These hypotheses are posited based on an understanding of Tichenor, Donohue, and Olien's (1970) Knowledge Gap Hypothesis. The Knowledge Gap Hypothesis suggests that information is not acquired evenly by all members of a society. Instead, people with a higher socioeconomic standing are better positioned to acquire information. One reason for this is that individuals from higher socioeconomic classes may also have access to better education and have higher education levels. While age is not specifically

addressed by Tichenor, Donohue, and Olien, it is expected that as a person will be exposed to more information over time thereby increasing their knowledge of a specific topic. Thus, the following hypotheses guiding this study are as follows:

Hypotheses

H1: There is a relationship between participant age and knowledge of postpartum depression (PPD).

H2: There is a relationship between participant education level and knowledge of PMDs.

Methodology

The following section will explain this study's research design and survey instrument, as well as provide information about the participants and recruitment process.

Participants

Participants included 175 women; however, 20 questionnaires were not analyzed due to partial completion. The final survey sample consisted of 155 participants. Participant ages ranged between 18 and 55+, with the majority of participants (43.2%) being 35-44. The sample was well-educated as 69% of participants reported obtaining a bachelor's degree or higher. See Table 1 for a breakdown of participant demographic information:

Table 1. Participant Demographics

Education Level	*n*	%	**Age**	*n*	%
Did Not Complete High School	1	0.6	**18-24**	2	1.3
High School Graduate	4	2.6	**25-34**	57	36.8
Some College	34	22	**35-44**	67	43.2
Associate's Degree	9	5.8	**45-54**	20	12.9
Bachelor's Degree	49	31.6	**55+**	9	5.8
Master's Degree	47	30.3			
Doctoral Degree	9	5.8			
Professional Degree (i.e., JD, MD)	2	1.3			

Research Design and Survey Instrument

This study employed a convenient snowball sample. Participants included women ages 18 and older who had given birth. A 16-item online questionnaire (See Appendix B) was available through the Survey Gizmo (surveygizmo.com) platform for a period of one month during January of 2018. An online questionnaire enabled participation by women across the world, as an online questionnaire transcends geographic barriers imposed by face-to-face questioning (Wright, 2005). Furthermore, the online questionnaire provides confidentiality, which is more difficult to secure face-to-face. In addition to questions related to demographics, question included ones related to PMD screening, knowledge about PMDs, and communication about PMDs.

While this was a minimal risk study, efforts were made to ensure ethical treatment of participants. There were no participant identifiers and the study was approved by the Johns Hopkins University Institutional Review Board. All participants were required to acknowledge receiving informed consent by dating an online informed consent page before beginning the questionnaire. Participants took, on average, four minutes to complete the questionnaire.

Recruitment letters (See Appendix A) were distributed via email and social media to members of the principal investigator and student investigator's personal and professional networks. Social media platforms included Facebook, Twitter, and LinkedIn. As this study employed a convenient snowball recruitment strategy, participants were asked to forward the questionnaire link to members of their networks who fit the inclusion criteria (females 18 or over who had given birth). Study participants were not responsible for any research-related costs, and were not offered incentives for their participation in this research. No direct identifiers were used

to maintain confidentiality. As this was a snowball study, there was a slight risk that participants may know one another and discuss survey questions in advance.

Data was collected via the Survey Gizmo platform's data collector. After the one-month data collection period, the collector was closed, which meant anyone who tried to access the survey was informed the study was no longer available.

Data Analysis

Survey Gizmo's data features provide descriptive statistics including measures of central tendency and variability. The Survey Gizmo platform provides this information in both chart and graph format and also allows data to be downloaded for additional statistical probing. The research questions were answered using the descriptive statistics provided by the platford, specifically the use of frequencies. To determine the existence of a relationship, data was downloaded to an Excel spreadsheet and analyzed using the XLSTAT program, an add-on Excel program that provides for more sophisticated statistical analysis. Correlation tests were performed to determine outcomes for each hypothesis.

The Pearson correlation measures the strength of the relationship between two variables. The correlation takes place on a range from +1 to -1. Values of zero indicate that no relationship exists between variables while values closer to +1 or -1 indicate the existence of either a positive or negative relationship between variables.

Reliability and Validity

Reliability and validity are difficult to ensure in a study that uses a new measurement. While there was no measure of reliability, due to self-administration of the questionnaire, reliability can be somewhat ensured through test-form consistency and a lack of alteration in delivery method. Without an investigator or proctor administering the questionnaire, there was

no opportunity for deviation in question verbalization to participants (Jones & Kottler, 2006). One way to improve upon reliability is with by having participants complete the questionnaire again at a later date. Known as test-retest reliability, this method ensures that answers remain the same over time. The test-retest method assumes there is no change to the construct or to the instrument and that retest participants also completed the first questionnaire. While test-retest is a feasible means of estimating reliability in studies without control groups, there is no reliability information until the retest is completed. A retest was not completed for this study due to time limitations and the fact that participants name and contact information was not collected.

The study does employ face and content validity. Face validity is simply determining whether the instrument "on its face" is a good translation of the construct being measured. This type of validity, while perhaps weak, was demonstrated through questions that were applicable to the study's research questions and hypotheses, and also applicable to the study of PMDs, based on previous studies (Anderson, 2011). Content validity, also called rational validity, indicates whether the questions asked are related to the main construct or actually measure something else. In this study, questions were asked that inform communication about and knowledge of PMDs. One way of determining content validity is to employ a panel of experts to determine how they rate the usefulness of questions in measuring the construct. This study relied on the expert knowledge and guidance of a health communication scholar; however, using an expert panel in advance to help determine question efficacy would allow for revisions to the instrument prior to making it available to participants.

In addition to reliability and validity, Survey Gizmo provides an accessibility and fatigue rating for questionnaires. This study's questionnaire had a low fatigue rate, indicating less

chance of participant abandonment, and high accessibility, meaning it is operable, understandable, and robust.

Findings

This section will explore the findings of this study. This section is separated by each research question and hypothesis.

RQ1: When do women report being screening for perinatal mood disorders?

The first research question asks, "When do women report being screened for perinatal mood disorders?" Descriptive statistics were used to determine whether or not participants were screened for perinatal mood disorders. If participants were screened, they identified when the screening took place. Most participants (n=99, 63.9%) indicated they were never screened for mental health conditions. Of those who were screened, (n=51, 32.9%) reported being screened after delivery while 11 (7.1%) participants reported being screened during their pregnancies and only nine (5.8%) participants reported being screened at their first prenatal visit. The findings of this RQ clearly indicate that mental health screening did not occur in the majority of the sample.

RQ2: Which healthcare professionals are performing screenings for perinatal mood disorders?

The second research question asked about the healthcare professionals who are performing screenings for perinatal mood disorders. Participants only answered this question if they responded that they had been screened for PMDs, but could select as many answers as applied to their situation. Thus, if a woman was screened by both a physician and a nurse, she could choose two answers. As found in RQ1, most participants did not report being screened for PMDs. However, of the 56 women who reported being screened (44.8%), were screened by either physicians, nurse practitioners, or physician assistants (providers licensed to prescribe

medications); a total of 22.4% were screened by nurses; another 12.7% were screened by doulas; and 9.9% were screened by other office of hospital staff. A smaller group of 4.2% answered "other" and were prompted to explain who performed their screenings. The one participant who provided an explanation as to who performed her screening, stated: I have had three children and was only screened after the birth of my third child - and only after extensive conversations with my OB about my previous experiences with PPA and PPD - I'm not sure that I would have been screened without those conversations.

RQ3: What is the nature of physician communication about PMDs to women?

The third research question asked, "What is the nature of physician communication about PMDs to women?" Participants were asked to indicate whether they were offered literature on PMDs and also whether they engaged in oral discussions about PMDs with a healthcare provider. If participants were offered literature, they were asked to identify the phase of pregnancy they received the literature.

Most participants (n=81, 52.3%) indicated that no perinatal mental health literature was offered to them at any time before, during, or after pregnancy. Of those who did receive literature, 31.6% (n=49) said they were offered information after delivery, 27.7% (n=43) were offered literature during pregnancy, and 1.9% (n=3) were offered literature at their first prenatal visit. These findings demonstrate that most women in this study did not receive written information about PMDs and of those who did, most were given information only after delivery.

Oral communication between participants and providers was slightly higher. A total of 61 participants (39.4%), reported that PMD information was not discussed at any time by healthcare providers. However, 67 participants (43.2%) indicated they engaged in PMD discussions after delivery. Another 47 participants (30.3%) stated that healthcare providers engaged in PMD

discussions during pregnancy. Only four participants (2.6%) noted engaging in discussions with healthcare providers during their first prenatal visit. Thus, while many participants did not receive oral information about PMDs during any phase of pregnancy, the majority of participants reported engaging in discussion about PMDs at some time during pregnancy, most often after delivery.

H1: There is a relationship between participant age and knowledge of postpartum depression (PPD).

The first hypothesis predicted an association between participant age and knowledge of symptoms of a common PMD, postpartum depression, based in part on an explication of the Knowledge Gap Hypothesis. A Pearson correlation was obtained to test this association. No relationship was found to exist between age and knowledge of common PPD symptoms (r = 0.015; p = .857). Thus, I fail to reject the first null hypothesis.

H2: There is a relationship between participant education level and knowledge of PMDs.

The second hypothesis predicted an association between participant education level and knowledge of symptoms of PPD. This hypothesis was also based on an understanding of the Knowledge Gap Hypothesis. A Pearson correlation was obtained to test this association. No relationship was found to exist between education level and knowledge of common PPD symptoms (r = -0.089; p = .271). Additionally, there was no relationship between education level and familiarity of PMD symptoms prior to giving birth (r = .37; p = .648). These results indicate that women do not have greater knowledge of PMDs at any one specific time; thus, I fail to reject the null hypothesis.

Discussion

This study sought answers to three research questions that pertained to issues such as PMD screening practices, women's knowledge of common PMD symptoms, and provider communication about PMDs. Additionally, this study predicted relationships in two hypotheses: participant age and knowledge of PPD and participant education level and knowledge of PMDs. The Knowledge Gap Hypothesis (Tichenor et al., 1970) served as the foundation for testing these hypotheses. The following discussion elaborates on the findings of this study, explains the limitations of this study, and outlines recommendations for future research. Discussion is provided for the research questions first, followed by the hypotheses.

Discussion of Research Questions

Screening for PMDs plays an integral role in the process of discovering symptoms, initiating a course of treatment, and ultimately providing a road to recovery for women who have these conditions. In this study, it was found that over half of participants (63.9%) indicated they were never screened for mental health conditions and 32.9% of participants were screened after delivery. Previous research suggests that screening should take place earlier, meaning prior to conception or during routine prenatal doctor visits (Johnson et al., 2006).

Research on earlier screening examined Misra's (2003) Perinatal Health Lifespan Model, which seeks to understand approaches of mental health, detection, and treatment throughout the perinatal period (Leight, Fitelson, Weston, & Wisner, 2010). Misra's model involves multiple phases over the span of a woman's life, including preconception, prenatal, intrapartum, postpartum, and interconception (the time between the end of one pregnancy and the beginning of another), with the main focus of the model being "preconception and interconception" (Leight et al., 2010, p. 462; Misra, Guyer, & Allston, 2003). Misra's research explains that severe

negative perinatal mental health outcomes can be avoided with an increased focus on screening and detecting conditions sooner and with more accuracy, and with quicker treatment for depression (Leight et al., 2010; Wisner, 2008).

Another point of consideration is the act of pre-screening, or pre-identifying patients at risk for developing PMDs. Identification of PMD risk factors plays an integral role in the pre-screening process. Healthcare providers should be aware of any previous family history of mental health disorders, as well as have an understanding of a patient's socioeconomic position, and familial support situation (Rambelli et al., 2009). If healthcare providers are aware of these risk factors, they can administer screening tests sooner (Camp, 2013). Knowledge of these risk factors may also enable healthcare providers to engage in conversations about PMDs, or provide at-risk patients with literature on PMDs. It is important to note that while screening scales and tools are valuable in identifying mental health disorders, the act of screening on its own does not prevent PMDs, or show improvement in clinical outcomes (Gaynes et al., 2005; Gilbody, Trevor, & House, 2008; Leight et al., 2010).

Despite the importance of screening, most participants in this study were not screened for PMDs. This may be partly due to the debate about which healthcare professionals are best suited for administering PMD screening. However, Tam et al. (2002, p. 81) emphasized that pediatric physicians offer an idyllic setting to screen for PMDs, due to the high frequency of well-baby appointments during an infant's first year of life, as well as their ability to show concern for proper infant development. Tam et al. (2002) suggest that pediatricians should be instructed on PMD assessment methods and the referral process in order for them to allow time to address PMDs during well-baby visits. There are others who believe screening is the responsibility of the women's obstetrician or gynecologist, or a nurse prior to the traditional postpartum appointment

(Kendig et al., 2017). Unfortunately, as Anderson (2011) explains, most women only see their physicians once for their postpartum appointment, and that appointment is often too early to recognize symptoms of PMDs as they differ from typical baby blues.

Brown (2015) suggests that nonpsychiatric providers should exercise caution when it comes to screening patients for PMDs, as this may be a key to "Pandora's Box." However, awareness of PMDs can provide healthcare professionals with knowledge about a patient's condition, and allow those healthcare professionals to refer patients if they are not comfortable with making a diagnosis or administering treatment (Brown, 2015). Camp (2013) explains that providers also need to be aware of various "nonverbal clues" displayed by patients that may warrant appropriate screening such as a disheveled appearance, a lack of interest in holding one's baby, fatigue or tiredness, or crying.

If women do not feel comfortable finding screening and referral help, they may remain untreated and subsequently, may encounter worsening of their conditions (Leight et al., 2010; Abrams, Dornig, & Curran, 2009; Dennis & Chung Lee, 2006). Unfortunately, as evidenced by the findings of this study, women are not being screened for PMDs. In the United States, only 13 states have developed PMD policies and only four of those states possess screening mandates (Rowan, Duckett, & Wang, 2015). Mandates for screening exist in Illinois, Massachusetts, New Jersey, and West Virginia. Screening for PMDs is essential to understanding the number of PMD diagnoses and how those diagnoses are impacted by socioeconomic status, complications of pregnancy, prior health status, etc. This knowledge is important in developing mental health initiatives at the state level.

In addition to screening for PMDs, it is also important that healthcare professionals communicate with women about mental health. In this study, one participant indicated she had a

PMD discussion with a "pediatrician after my last birth…[because] I had an episode with the baby that concerned him." This study found that many women did not receive communication, either written or oral, about PMDs before, during, or after pregnancy. Those who did mostly received information after pregnancy, via discussion with a physician. Only 27.7% of participants were offered literature during their pregnancies and only 1.9% were offered literature at their first prenatal visit. Also, less than half of participants (32.9%) reported having discussions about PMDs during the first prenatal visit or during their pregnancies. Of the 96 participants who had discussions with healthcare providers about PMDs, 72.9% reported nurses and prescribers (physicians, nurse practitioners, and physician assistants) as the individuals who engaged in those discussions. These results showcase a need for more proactive literature offerings and increased discussion of PMDs. It is encouraging, however, that discussions are being held by nurses and prescribers. Unfortunately, daily demands placed on nurses and prescribers continue to be on the rise. Managed care challenges, increases in the numbers of patient visits, and recording patient data for quality measure reimbursement (i.e., blood pressure and cholesterol guidelines) are factors that influence the amount of time physicians and nurses can spend with patients. Therefore, it is necessary to explore ways in which other healthcare professionals, such as medical assistants, specialized office staff, or contracted social workers, can introduce the topic of PMDs to mothers. For instance, one participant noted that she obtained literature from a psychiatrist in a Women's Mood Clinic and another reported having conversations with a nurse, doctor, and doula.

Participants also reported other ways of receiving information, short of literature or personal discussion. One participant stated that she was given "an informational DVD that was to be watched before discharge." Three other participants reported receiving videos after birth, as

well as standard hospital discharge paperwork and recalled possibly receiving an information packet. Another participant indicated receiving literature at a birth class.

While it is important to applaud the efforts of healthcare providers who do screen for and communicate about PMDs, it is equally important to acknowledge that this is not a common practice. For many women, concerns about PMDs are dismissed. One participant reported being told by her doctor "to keep a strong mind." While it is positive that this participant engaged in a discussion with her doctor, the comment is dismissive and provides no direction on how to address the patient's situation. It is important for physicians to explain PMD materials to patients and also to listen to and acknowledge, and attempt to address patients' concerns. Camp (2013) notes that healthcare providers should discuss the emotional components, as well as the physical components of pregnancy. If perinatal patients are aware of both the emotional and physical changes of pregnancy through proper communication that leads to increased knowledge and understanding, patients may feel more at ease when asking for help with PMD symptoms (Camp, 2013).

Evidence that supports proactive PMD discussions with women during their pregnancies is outlined by Mao, Li, Chiu, Chan, & Chen (2012). Mao et al. (2012) examined discussion and distribution of PMD information during childbirth classes. They examined the efficacy of an "emotional self-management group training" program (ESMGT), which showed similar characteristics to that of cognitive behavioral therapy (CBT). Screening was performed prior to the start of the training/education programs and outcome measures were taken at pre and post intervention, as well as six weeks post-delivery, via the Patient Health Questionnaire-9 (PHQ-9) assessment, the EPDS, and the Structural Clinical Interview for DSM-IV (SCID). After completion of the ESMGT and standard education (36 weeks antenatal), the intervention group

showed a significantly lower (better) score than that of the control group. At the six-week postnatal mark, the intervention group's EPDS score was significantly lower (better) than the control group's score. In addition, the PHQ-9 and EPDS demonstrated that depressive symptoms improved significantly in the intervention group versus those symptoms in the control group. The intervention showed that improved communication decreased risk for PPD at the six-week postnatal mark (Mao et al., 2012).

The Mao et al. (2012) study also underscores the importance of providing communication in alternative formats, outside the physician's office, as their study focused on communication provided at childbirth classes. In this study, 112 of 155 participants attended childbirth classes. However, only 25.9% of those participants received PMD communication, either through discussions or literature disbursement. Early PMD awareness is vital in preparing women for all aspects of childbirth. Camp explains that, "patients need to know about the occurrence of PPD, what to look for, and what to do to get help should the warning signs be present" (2013, p. 49). If patients are better informed, they are also more prepared to act if they experience PMD symptoms.

Discussion of Hypotheses

While no relationship was found to exist between participant age or education and knowledge of common PPD symptoms, it is important to note that this study's participants were well-educated. As previously mentioned, most of the study participants received a Bachelor's degree or higher, with 58 (37.4%) receiving a graduate or professional degree. This well-educated sample makes it difficult to elucidate any real differences in age or education. Further, the Knowledge Gap Hypothesis indicates that higher socio-economic status leads to increased knowledge (Tichenor et al., 1970). Income information was not obtained in this study, so an

association between socioeconomic status and knowledge cannot be determined. Others, however, have studied patient demographics and associations with knowledge attainment in the context of PPD, finding demographic variables are related to a knowledge gap about PPD, with younger women with younger children, a higher education, and an urban location producing higher levels of knowledge about PPD (Anderson, 2011). Thus, it is important to continue exploring the impact of demographic characteristics and knowledge of PMDs.

Study Limitations

As with all research, there were limitations of this study. As mentioned, this was a well-educated sample. Due to high levels of education, those participants might have been more aware of PMD conditions and symptomatology and they could have been more inclined to proactively initiate conversations about PMDs with their healthcare professionals. Additionally, as this study employed a convenient snowball sample that stemmed from the principal and student investigators' social and professional networks, participant demographics were likely skewed towards the investigators. Also, the investigators' contacts likely sent the survey to specific friends, family members, or colleagues who struggled with PMDs, thus creating a higher chance that the sample included women who experienced PMDs.

Further, many participants indicated it had been more than 10 years since they had given birth. This may lead to participants experiencing difficulty recalling their perinatal experiences. As a result, these women might have selected answers that differed from their actual perinatal experiences. Additionally, PMD knowledge and awareness has changed drastically in the past 10 years. Awareness has improved due in part to celebrity disclosures of PMDs and primetime television shows like *Private Practice* and *Nashville* dedicating storylines to characters with

PPD. This increased awareness may improve knowledge of PPD thereby causing participants to indicate higher knowledge of PPD than perhaps they had during their pregnancies.

Lastly, this study lacks in both construct validity and high reliability. This could be improved through test-retest measures, and the inclusion of an expert panel to assess the questionnaire prior to being utilized again. However, the use of self-report questionnaires allows for measuring a construct that would be difficult to obtain otherwise. An increase in validity and reliability could be achieved by employing a stratified sampling process. The act of assigning "subgroups or subpopulations," such as geographic location and income level, within the total population, would also increase generalizability in a larger sample size (Jones & Kottler, 2006, p. 62).

Recommendations for Future Research

There are many facets of PMDs that warrant additional research. One area of focus would be to examine the most effective methods of educating nurses, primary care physicians, specialists, pediatricians, and other related women's health providers (i. e. medical assistants) about the necessity of screening and proper screening methods for PMDs. Another area ripe for research is the study of how women prefer to get information, and what ways are best for knowledge advancement and improved awareness. With healthcare professionals busier than ever before and pregnancy-specific mobile technology, it is worth exploring how effective it is for women to receive information via mobile apps or other technological tools. Additionally, it is important to study the development of, communication about, and screening behaviors in different populations. As this sample was well-educated, it is important to understand how lesser-education individuals receive and process information, in addition to individuals in other marginalized groups, such as rural patients, lower income patients, and young mothers. Lastly, it

is important to continue studying the ways in which stigma about PMDs affect disclosure of PMD symptoms and impact patient-provider relationships.

Conclusion

This study attempts to provide a better understanding of communication about PMDs and the screening behaviors of healthcare professionals. Findings of this study indicate a general lack of screening and communication about PMDs. It is important to continue research about these issues as increased screening and communication are related to decreased negative outcomes associated with PMDs. These findings have implications not only for the healthcare professionals who diagnose and treat PMDs, but the thousands of women who suffer with these conditions each day.

Appendix A

Recruitment Notifications

Email Recruitment Letter

Hello,

My name is Jodi Drake and I am a graduate student at Johns Hopkins University, conducting research for my Master's thesis under the direction of Dr. LaKesha Anderson. I am collecting answers to a survey on postpartum depression and would be grateful for your participation. Your input is extremely important for increasing our understanding of perinatal mood disorders, as well as screening and communication about these conditions. You can be reassured that your answers will remain confidential and will not be linked to you as a participant.

The survey should take no longer than 15 minutes to complete. The survey is available via: http://www.surveygizmo.com/s3/4033547/Perinatal-Mood-Disorder-Education-and-Screening.

I ask that you please forward this survey to any friends, colleagues, and family members who may be able to participate as well. I greatly appreciate your participation and thank you for your time.

Kind Regards,

Jodi L. Drake

jdrake11@jhu.edu

Facebook/Twitter/LinkedIn Recruitment Post

Calling All Mothers Ages 18+

I am conducting a research study on perinatal mood disorders for my thesis at Johns Hopkins University and would welcome your participation in an online survey. The survey should take no longer than 15 minutes to complete and can be found at http://www.surveygizmo.com/s3/4033547/Perinatal-Mood-Disorder-Education-and-Screening. Please forward this information anyone in your network who may be willing to participate as well. Thank you for your time! Please reach out with any questions at jdrake11@jhu.edu. Thank you!

Appendix B

Measurement

Johns Hopkins University

Homewood Institutional Review Board (HIRB)

Informed Consent Form

Title: Lifting the Fog: Provider Screening Behaviors and New Mothers' Knowledge of Perinatal Mood Disorders
Principal Investigator: LaKesha N. Anderson, Ph.D.
Date: December 17, 2017

PURPOSE OF RESEARCH STUDY:
The objective of the current study is to uncover the amount and type of perinatal mood disorder information that women received throughout pregnancy and after delivery. This study also attempts to understand women's current knowledge of perinatal mood disorders.

PROCEDURES:
Participants are asked to complete a brief online survey. The time necessary to complete this survey is approximately 10 minutes.

RISKS/DISCOMFORTS:
The risks associated with participation in this study are no greater than those encountered in daily life.

BENEFITS:
There are no direct benefits to individuals from participating in this study. This study may benefit society if the results lead to a better understanding of perinatal mood disorder screening and communication.

VOLUNTARY PARTICIPATION AND RIGHT TO WITHDRAW:
Your participation in this study is entirely voluntary: You choose whether to participate. If you decide not to participate, there are no penalties, and you will not lose any benefits to which you would otherwise be entitled.

If you choose to participate in the study, you can stop your participation at any time, without any penalty or loss of benefits. If you want to withdraw from the study, you can choose close the unfinished survey, or, if you have completed the survey but wish to have your survey destroyed, please contact the study's student investigator, Jodi Drake, at jdrake11@jhu.edu.You will not be required to state your name or other identifying information.

CONFIDENTIALITY:
Any study records that identify you will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including members of the Johns Hopkins University Homewood Institutional Review Board and officials from government agencies such as the National Institutes of Health and the Office for Human Research Protections. (All of these people are required to keep your identity confidential.) Otherwise, records that identify you will be available only to people working on the study, unless you give permission for other people to see the records.

All study records will be stored in a secure office desk accessible only to the researcher and student investigator. The online survey will remain confidential and access is permitted only by password, which is available only to the researcher and student investigator.

COMPENSATION:
You will not receive any payment or other compensation for participating in this study.

IF YOU HAVE QUESTIONS OR CONCERNS:
You can ask questions about this research study now or at any time during the study by emailing Dr. LaKesha Anderson at lander73@jhu.edu. If you have questions about your rights as a research participant or feel that you have not been treated fairly, please call the Homewood Institutional Review Board at Johns Hopkins University at (410) 516-6580.

SIGNATURE
By entering the date below, you confirm that you are 18+ years of age and have given birth to an infant. You also confirm that you have read this informed consent form, and that you agree to participate in this study.

Notes: The space for Question 1 was filled by the signature (date) line. Asterisks denote required questions.

2. What is your highest level of education? *

- ○ Did not complete High School
- ○ High School Diploma
- ○ Some College
- ○ Associate's degree
- ○ Bachelor's degree
- ○ Master's degree
- ○ Doctoral degree
- ○ Professional degree (ex: MD, JD)

3. What is your age? *

- ○ 18 to 24
- ○ 25 to 34
- ○ 35 to 44
- ○ 45 to 54
- ○ 55+

4. How long has it been since you last gave birth? *

- ○ Less than 1 year
- ○ 1- 3 years
- ○ 4-6 years
- ○ 7-10 years
- ○ 10 + years

5. How familiar were you with symptoms of perinatal mood disorders including postpartum depression, postpartum anxiety, postpartum-induced OCD, or postpartum psychosis before pregnancy? *

- Not at all familiar
- Slightly familiar
- Neutral
- Very familiar
- Extremely familiar

○ ○ ○ ○

6. Were you *offered* literature on perinatal mood disorders? (If you were offered literature multiple times, choose all answers that apply). *

- ☐ Yes, at my first prenatal visit
- ☐ Yes, sometime during my pregnancy
- ☐ Yes, after delivery
- ☐ No perinatal mental health literature was offered to me at any time.

7. If you answered yes to question #7, please specify from whom you were offered this literature.

- ○ Nurse
- ○ Physician/Nurse Practitioner/Physician Assistant
- ○ Doula/Midwife
- ○ Office staff
- ○ Other - Please Explain ☐

8. Did a healthcare team member *discuss* perinatal mood disorders with you? (If you had multiple discussions about perinatal mood disorders, choose all answers that apply). *

- ☐ Yes, during my first prenatal visit
- ☐ Yes, sometime during my pregnancy
- ☐ Yes, after delivery
- ☐ No, perinatal mental health was not discussed with me at any time

9. If you answered yes to question #9, please specify with whom you discussed perinatal mood disorders.

- ○ Nurse
- ○ Physician/Nurse Practitioner/Physician Assistant
- ○ Doula/Midwife
- ○ Office staff
- ○ Other - Please Explain ☐

10. Were you *screened* for perinatal mood disorders? (If you were screened multiple times, choose all answers that apply). *

- ☐ Yes, during my first prenatal visit
- ☐ Yes, during my pregnancy
- ☐ Yes, after delivery
- ☐ I was never screened for mental health conditions

11. If you answered yes to question #11, who screened you for perinatal mood disorders?

- ○ Nurse
- ○ Physician/Nurse Practitioner/Physician Assistant
- ○ Doula/Midwife
- ○ Office or Hospital staff
- ○ Other - Please Explain ☐

12. Was perinatal mood disorder literature offered to you or discussed with you during childbirth classes? *

- ○ Yes
- ○ No
- ○ I did not attend childbirth classes

13. Were you diagnosed with any mental health conditions or perinatal mood disorders *prior to or during* your pregnancy (i.e. depression, bipolar disorder)? *

- ○ Yes
- ○ No

14. Were you diagnosed with any perinatal mood disorders *after* your pregnancy (i.e. postpartum depression, postpartum anxiety, postpartum OCD, or postpartum psychosis)? *

- ○ Yes
- ○ No

15. Did you attend any support groups during or after your pregnancy?

- ○ Yes, I attended a general support group for new/expecting mothers.
- ○ Yes, I attended a support group specifically for women experiencing perinatal mood disorders (postpartum depression/anxiety/OCD/psychosis)
- ○ I attended another type of support group - Please Explain ☐
- ○ I did not attend a support group of any kind

16. Which of the following are common symptoms of *postpartum depression*? *

- ☐ Feeling sad, hopeless, empty, or overwhelmed
- ☐ Crying more often than usual or for no apparent reason
- ☐ Feeling moody, irritable, or restless
- ☐ Oversleeping, or being unable to sleep even when her baby is asleep
- ☐ Having trouble concentrating, remembering details, and making decisions
- ☐ Thinking about harming oneself or the baby
- ☐ Persistently doubting own ability to care for the baby
- ☐ Experiencing anger or rage
- ☐ Having trouble bonding or forming an emotional attachment with the baby
- ☐ Withdrawing from or avoiding friends and family
- ☐ Suffering from physical aches and pains, including frequent headaches, stomach problems, and muscle pain
- ☐ Eating too little or too much
- ☐ Losing interest in activities that are usually enjoyable

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Curriculum Vitae

Jodi Lee (Haack) Drake was born in Hammond, Indiana on November 25th, 1974 and grew up in Griffith, Indiana. She graduated cum laude with a Bachelor of Arts in Communication-Radio/TV from Purdue University Northwest in May of 2000. During her tenure at Purdue, she was named Outstanding Graduating Senior of the Communication Department, Outstanding Student of the Chancellor, and received an Honorable Mention-Videographer Award. Jodi currently resides in Carmel, Indiana with her husband (Ryan), three boys (Garrett, Owen, and Andrew), and dog (Reggie). Her interests include singing, piano, tennis, watching football, fashion, and running, where she completed her first half marathon in December of 2017. She has volunteered for organizations, such as the March of Dimes, American Lung Association, Purdue University, and the Indianapolis Symphonic Choir, in which she performed at St. Peter's Basilica in Vatican City.

Jodi is an award-winning pharmaceutical and media sales professional and former Walt Disney World attractions hostess, looking to transition into a communication role by combining her graduate degree and prior career experience. Her interest in mental health began during her tenure in the pharmaceutical industry, while educating healthcare providers on a psychiatric medication. Jodi is currently a member of the Communication Committee in the Postpartum Support International Indiana Chapter, and she obtained a PMAD Components of Care certification in October of 2017. One of Jodi's future goals is to publish and present her thesis work. She aspires to help foster more PMAD proactive screening awareness and to help women get the support, education, and treatment they need in order to overcome their conditions.